

CLAIMS

What is claimed is:

1. An integrated engine for beach cruisers comprising a speed variator 2, a rear gear box component 3, a shaft 4, a left crankcase component 5 and a left crankcase cap component 6; the rear gear box component 3, the left crankcase component 5 and the left crankcase cap component 6 are connected to form a closed housing structure, wherein it also comprises an engine 1 directly connected with the speed variator 2; the output end of the speed variator 2 is connected with the shaft 4 by spline connection.
2. The integrated engine for beach cruisers as in Claim 1, wherein the speed variator 2 is formed by connecting an automatic indefinite speed variator mechanism 2A and a gear double reduction mechanism 2B.
3. The integrated engine for beach cruisers as in Claims 1 or 2, wherein the shaft 4 is divided into left and right shafts 4C, 4D; a differential 7 is disposed between the speed variator 2 and the left and right shafts 4C, 4D.
4. The integrated engine for beach cruisers as in Claim 3, wherein a hole 9A is disposed on a pin shaft 9; the facing ends of the left and right shafts 4C, 4D are disposed with internal splined holes 8, 10; a spline shaft 11 of one of the internal splined holes 10 can slide into the other internal splined hole 8 so that the left and right shafts 4C, 4D can be connected.
5. The integrated engine for beach cruisers as in Claim 4, wherein the right shaft 4D is a hollow structure; its push-and-pull shaft 13 is connected with the spline shaft 11 by a connection pin 12.

6. The integrated engine for beach cruisers as in Claim 5, wherein the outer surface of the right end of push-and-pull shaft 13 is disposed with screw rings cooperating with a screw hole 4E and a screw nut 14.
7. The integrated engine for beach cruisers as in Claim 3, wherein the left shaft 4C is disposed with a shifting mechanism 17 and the two are connected by spline connection; a shifting piece 15 is fixedly disposed on the shifting mechanism 17; the right side of the shifting piece 15 is disposed with kidney-shaped hooks 15A; kidney-shaped slots 15B cooperating with the kidney-shaped hooks 15A are disposed on a main gear 4B.
8. The integrated engine for beach cruisers as in Claim 7, wherein three kidney-shaped hooks 15A are evenly distributed on the right side of the shifting piece 15.
9. The integrated engine for beach cruisers as in Claim 7 or Claim 8, wherein six kidney-shaped slots 15B are evenly distributed on the main gear 4B.
10. The integrated engine for beach cruisers as in any one of Claims 2 to 9, wherein the gear double reduction mechanism 2B is also disposed with a reverse gear shaft component 19, a gear shift piece 21 and a reverse gear shift fork 22; the gear shift piece 21 is connected with a middle shaft 20 by spline connection; the middle shaft 20 is disposed with a middle shaft gear 20B.